SECTION 23

PARAPETS, RAILINGS AND CHAIN LINK FENCING

1.23.1 FENCING WARRANTS

The following conditions may warrant chain link fencing on structures. Also, the AASHTO publication, A GUIDE FOR PROTECTIVE SCREENING OF OVERPASS STRUCTURES - dated November, 1990 may be referred to for guidance.

a. Warrants for Fencing

1). Highway carrying, grade separation or high level bridges with facility for pedestrian traffic.

2). Expressed concern due to recorded incidents of vandalism from a structure.

3). Existing or potential for pedestrian traffic nearby consistent with item number 1 above.

a.) Schools, churches, etc.

b.) Built up areas

c.) Shopping areas, malls

4). Compliance with formally published federal guidelines, if applicable.

5). Locations where existing railing or parapet conditions are substandard with regard to pedestrian safety.

6). Fencing to preclude unsafe acts or conditions; such as, snow passing through railing, pedestrian access.

7). Where any local regulations, laws or ordinances require protective screening.

8). On overpasses where property is subject to damage, such as buildings or power stations located beneath the structure.

9). Where the above conditions are not clearly present, the Designer shall judge the specific location and submit, if deemed warranted, a request to install fencing. The request shall be directed to the Manager, Bureau of Structural Engineering.

b. Upgrading Existing Fencing.

Present standard for highway carrying bridges is 2.715 meters with curved top.

c. Fencing on Approaches

Roadway fencing criteria applies to right of way fencing only. The foregoing warrants apply to fencing on bridges and structures.

d. Pedestrian Bridges and Ramps

New construction - utilize enclosed type fencing on all pedestrian bridges, if necessary (Type 7 system).

Existing bridges - utilize enclosed type fencing on all pedestrian bridges, including stairs. (Type 7 system).

1.23.2 TYPES OF PARAPETS, BRIDGE RAILINGS

Page 1.23-4 illustrates systems that meet crash test standards. As defined in NCHRP Report 350, "Recommended Procedures for the Safety Performance Evaluation of Highway Features", the following systems meet Test Level 4 criteria. These type systems should be used on all New Jersey bridge structures.

Type 1. The 4 - bar tubular open steel bridge railing system, for traffic and pedestrian use, provides better driver visibility because of its see through feature. Refer to Standard Drawings 2.2-1 and 2.2-2 for detailing of this system.

Type 2. Concrete parapets, 2 meters high and integrated with a sidewalk are used for spans over electrified railroad tracks.

Type 3A. The 815 millimeter concrete parapet surmounted by a 1.9 meter high chain link fence is used on local roads or land service roads which require pedestrian sidewalks. This system is used only where Type 3B cannot be used.

Type 3B. Same as Type 3A, except it has a curved top.

This system cannot be used on narrow sidewalks unless a 760 millimeter minimum horizontal clearance between curb and tip end of curved chain link fence post is provided.

Type 4. A 815 millimeter high parapet surmounted with an ornamental one-rail railing. Ornamental one-rail railing is considered on an individual bridge basis depending on overall aesthetic considerations. This system is used on low level, short span bridges over a shallow stream or drainage area.

Type 5. Concrete parapets, 865 millimeters minimum height, with NJ barrier curb configuration are generally used on bridges which do not have sidewalks. Ornamental one-rail railing may be considered on an individual bridge basis.

Type 6. Concrete parapets, 2.0 meters high, integrated with NJ barrier

configuration are used on spans over electrified railroad tracks where sidewalks are not required.

See Guide Sheet Plate 3.7-1

Type 7. A curved-top, totally enclosed chain link fence system, is used on pedestrian bridges. Enclosed fence shall be used for the full span length including shoulders. The extent of its use on ramps shall be determined on a project-to-project basis.

With the use of the above type parapets, in considering the height of the parapet/railing configurations, a 1100 mm height for bicycle traffic and a 870 mm height for pedestrian traffic, as warranted, should be provided.